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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,178	04/01/2004	Walter Henry Berryman	0641-0261PUS1	7385

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EXAMINER	
WEINSTEIN, LEONARD J	
ART UNIT	**PAPER NUMBER**
3746	

NOTIFICATION DATE	DELIVERY MODE
10/03/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/814,178	BERRYMAN ET AL.	
	Examiner	Art Unit	
	Leonard J. Weinstein	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
- after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☒ Claim(s) *20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/01/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 20 and 21 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitations of "with reference to FIGS. 1 to 3 of the accompanying drawings" in claim 20 and "with reference to FIGS. 4 to 12 of the accompanying drawings" in claim 21 do not further limit the claimed invention and cannot be considered for the purpose of the office action on the merits that follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4-12, 15-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by James et al. US 6,631,638. James teaches all the limitations as claimed for a control for controlling a pump including (claims 1-2 and 4-11): a metal, with element 65 of element 34, substrate 34 adapted to have a first side 37 thereof exposed to said fluid medium (col. 2 ll. 33), an insulating medium, elements 13 and 49, applied to a second side of said substrate 34 (col. 2 ll. 46-51), pressure sensing means 52 including at least one pressure responsive element 58, implemented on said insulating medium, elements 13 and 49, closely adjacent said substrate 34 such that said pressure element 58 is responsive to pressure of said fluid medium when said

first side 37 is exposed to said fluid medium (col. 4 ll. 22-24), flow sensing means 18 including at least one source 14 of heat and at least one temperature responsive element, elements 15, 16, 18, 20, 22, 24, 26, 28, and 30, implemented, as shown in figure 3, on said insulating medium, elements 13 and 49, closely adjacent said substrate 34, such that said temperature responsive element, elements 15, 16, 18, 20, 22, 24, 26, 28, and 30, is responsive to flow of said fluid medium when said first side 37 is exposed to said flow (col. 2 ll. 64-67; cole. 3 ll. 1-7), said fluid medium providing a sink for said source of heat in a manner that is related to said flow, (col. 6 ll. 64-67) switching means, via elements 70 and 73, for switching said pump on or off (col. 6 ll. 6-12), and processing means (col. 3 ll. 8-11; col. 6 ll. 6-12) for receiving data from said pressure sensing means 52 and said flow sensing means 18, said data being communicated via conductive tracks 73 implemented on said insulating medium, elements 13 and 49, said processing means (col. 3 ll. 8-10; col. 6 ll. 6-12)) being adapted for processing said data and for producing an output for driving said switching means (col. 6 ll. 6-12); a metal substrate 34 includes titanium, (col. 9 ll. 14-18) as defined by element 75 of element 34; (claim 4) an insulating medium, elements 13 and 49, includes a ceramic (col. 2 ll. 38-40; 46-51); a pressure responsive element 58 includes a plurality of resistors, 54 formed by conductive tracks (col. 4 ll. 15-18) on said insulating medium, elements 13 and 49, said resistors 54 being arranged such that pressure on said substrate 34 is measured by a change in value due to tension (col. 4 ll. 23-27) on said resistors 54; a temperature responsive element, elements 15, 16, 18, 20, 22, 24, 26, 28, and 30, includes an operational amplifier 70 and a bridge circuit 73 containing a plurality of thermisters; in the embodiment as disclosed in column 7 lines 7 27-37, a switching means includes a triac, in the alternate embodiment with elements 18, 20, 22, 24, 26, 28 , and 30 (col. 7 ll. 27-37); a triac, as discussed, is mounted on said substrate 34 to

provide said source of heat (col. 7 ll. 27-37); a temperature responsive element, element 15 of the temperature responsive element as discussed above in the first embodiment as disclosed by James '638, includes a temperature sensor, elements 42 and 44, on each side of said metal substrate 34 for detecting a temperature difference between said first and second sides (cool 7 ll. 10-12); a processing means (col. 3 ll. 8-11; col. 6 ll. 6-12) is adapted to compensate for anomalies caused by said temperature difference (col. 7 ll. 22-26); and a processing means includes a microprocessor or microcontroller (col. 3 ll. 8-11; col. 6 ll. 6-12).

Further James teaches all the limitations as claimed for a housing for a sensor substrate including (claims 12, 15-16, and 18): a main body 32 having an opening 21 for said fluid medium and for receiving said sensor substrate 34 with its wet side exposed to said opening 21, a first chamber 35 maintained substantially at atmospheric pressure, first sealing means 49 arranged between said opening 21 and said sensor substrate 34 such that a leak path, path defined along element 49 and communicating with outer circumference of element 12, is provided to said first chamber 35, a closure 60 for said housing 10 including a second chamber 56 exposed to said dry side of said sensor substrate 34, and second sealing means 62 arranged between said closure 60 and said first chamber 35 to substantially prevent ingress of said fluid medium to said second chamber 56; (claim 15) a first 49 and second 62 sealing means are connected by a membrane 58, said membrane 58 providing an additional barrier to moisture reaching said dry side of said sensor substrate 34, clearly shown in figure 4; a membrane 58 includes a recess, within spaces formed on the surface of element 58 by embossing element 58, for receiving a peripheral edge of said sensor substrate 34 (col. 8 ll. 38-45); (claim 18) and membrane 58 is formed from an elastomeric material col. 4 ll. 23-27.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. US 6,631,638. James discloses the claimed invention except for a metal substrate including low carbon stainless steel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to including low carbon stainless steel in a substrate in order to provide a flow sensor cast onto a die (James – col. 2 ll. 31-34). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

7. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over James in view of Cochim et al. 5,863,185. James teaches all the limitations as discussed and including a sealing means 49 between a wet side 37 of a sensor substrate 34 and in inner edge of an opening 21, and a sealing means 62 between an edge associated with said first chamber 35 and said closure 60 but fails to teach the following limitation that is taught by Cochim for a

substrate 203 for a control for a pump provided with a sealing means 208 including peripheral bead (Cochim - col. 8 ll. 63-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a peripheral bead as a sealing means for a sensor in direct contact with a fluid flow in order to prevent the "upper electronics" (James col. 4 ll. 32-33) of a sensor from being in contact with a fluid flow (Cochim - col. 8 ll. 63-67).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over James in view of Hiron et al. US 5,736,650. James teaches all the limitations as discussed but fails to teach the following limitation that is taught by Hiron for a fluid flow detection including a venturi device 18 adapted to accelerate flow of pumped fluid (Hiron - col. 7 ll. 28-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a venture device in a housing for a substrate fluid flow sensor in order to use the pressure drop across the device to determine fluid flow rate (Hiron – col. 2 ll. 29-43).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. Weinstein whose telephone number is 571-272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJW

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